

### **REMARKS**

Claims 1-53 are pending and were rejected. Claims 1, 2, 3, 5, 6, 18, 22, 31, 36, 44, 46, 51, and 53 were amended. No claims were cancelled. Thus claims 1-53 remain pending.

#### **Requirement for Information under 37 CFR § 1.105**

The Examiner has required the Applicants to provide a copy of the non-patent literature "Entity Authentication Using Public Key Cryptography" 1997 February 18<sup>th</sup> US Department of Commerce, (Attached as Exhibit "A") and "Three Pass Authentication" of ISO/IEC 9798-3, "Information technology-Security techniques-Entity Authentication-Part 3: Mechanisms using digital signature techniques," 1993 and 1998 (Attached as Exhibit "B").

Applicants do not clearly understand why the Examiner has required the Applicants to provide a copy of "Entity Authentication Using Public Key Cryptography," as the Examiner has included a copy of this reference when transmitting the Office Action to the Applicants. However, Applicants include a copy of this reference with the other required reference ISO/IEC 9798-3, "Information technology-Security techniques-Entity Authentication-Part 3: Mechanisms using digital signature techniques" 1998 attached to this Response. The 1993 version of ISO/IEC 9798-3 required to be submitted is not readily available to the parties from which it was requested.

The Examiner has also required that, where the claimed invention is an improvement over stated non-patent literature, Applicants identify what is being improved. Applicants note that the claimed invention is not an improvement over the stated patent literature in that aspects of the invention are orthogonal to the stated non-patent literature.

#### **Oath/Declaration**

The Examiner contends that the oath or declaration is defective. Applicants contend, however, that the present application has been filed correctly according to the Manual of Patent Examining Procedure § 409.03. If a joint inventor refuses to join in an application for patent, the application may be made by the other inventors on behalf of themselves and the omitted

inventor. MPEP § 409.03. Applicants filed a Response to Notice to File Missing Parts of Application on January 31, 2002 containing, among other documents, a declaration in compliance with 37 CFR § 1.63, a Petition for Acceptance of National Application without Participation of One or More Inventor Under 37 CFR § 1.47, and a Declaration of Louis Brucculeri in Support of Petition under 37 CFR § 1.47). The Examiner will note that the declaration includes each requirement cited by the Examiner in paragraph 3 of the Office Action, except as to where a requirement is superseded by the procedures of 37 CFR § 1.47. Application papers submitted by Applicants were forwarded to the Office of Petitions for a determination of whether the papers were proper, complete, and acceptable pursuant to 37 CFR § 1.47 and for a decision on the petition before the application was sent to the Technology Center. The Office of Petitions granted Applicants' petition by issuing a "Decision According Status Under 37 CFR § 1.47(a)" ("Decision") on August 23, 2002. The Decision explicitly states that the declaration of Louis Brucculeri filed June 6, 2002 has been found in compliance with 37 CFR § 1.63. For the Examiner's convenience, copies of the petition and the declaration are attached to this reply (Attached as Exhibit "C").

Rejections under 35 U.S.C. § 112, First Paragraph

Claims 51, 52, and 53

Claim 51 stands rejected under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement. Claim 51 has been amended to correct the typographical error causing the enablement rejection and should now be allowed. Claims 52 and 53 stand rejected under 35 USC § 112, first paragraph, due to their dependence on independent claim 51. As claim 51 is now allowable, claims 52 and 53 should also be allowed. Applicants therefore request the withdrawal of the rejections under 35 USC § 112, first paragraph, and the allowance of claims 51, 52, and 53.

Rejections under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected various claims in the present application under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicants note that the examiner

should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. MPEP § 2173.02. "Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire." *Id.* "Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite." *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004).

Accordingly, a claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004) (holding that the disputed claim term "surrender value protected investment credits" which was not defined or used in the specification was discernible and hence not indefinite because "the components of the term have well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence").

MPEP § 2173.02. In light of the above, Applicants contend that none of the claims listed by the Examiner are indefinite as written. However, in an attempt to cooperate with the Examiner to improve the clarity or precision of the language used, Applicants have amended some of the claims which the Examiner regards as indefinite. In amending these claims, however, Applicants in no way intend to narrow the scope of any claim. The amendments made in regard to the Examiner's comments maintain the scope of the original claims while making the invention more clearly described for the Examiner.

Claims 1, 3, 4-6, 10-13, 21-23, 26, 31-37, 40, and 45-50

Claims 1, 3, 4-6, 10-13, 21-23, 26, 31-37, 40, and 45-50 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 5, paragraph 4, states that the terms "first type derivative," "second type derivative," and "third type derivative" are indefinite, because "the instant specification only provides examples of 'derivatives' and provides neither a definition or the total number of possible derivatives.

Definiteness of claim language must be analyzed in light of the content of the particular application disclosure; the teachings of the prior art; and the claim interpretation that would be

given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. MPEP § 2173.02. The instant specification, at paragraph [00145], discloses derivatives “created through differing derivation schemes (type 1 and type 2 respectively).” Various numbered types of derivatives are discussed throughout the specification. As disclosed in paragraph [00141] of the specification, these derivatives can be anything based on a specific piece of information, including an encryption, encoding, checksum, or hash, or even an encryption or encoding of a checksum or hash. The components of the terms “first type derivative,” “second type derivative,” etc., have well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence. This is especially true when reading the terms in light of the instant specification. Those of skill in the art, therefore, will recognize that the convention employed by Applicants of referring to derivations as a “first type derivative,” “second type derivative,” etc., refer to derivatives resulting from derivation schemes that are not necessarily identical (e.g., a first type of derivation scheme, a second type of derivation scheme, etc.). As such, the scope of the claimed subject matter in the above claims can be determined by one having ordinary skill in the art. Applicants therefore request the withdrawal of the rejections under 35 USC § 112, second paragraph, and the allowance of claims 1, 3, 4-6, 10-13, 21-23, 26, 31-37, 40, and 45-50.

#### Claims 1 and 7

Claims 1 and 7 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 5, paragraph 4, states that the term “pre-defined information” is indefinite, because the claims do not state what time, event, or action the information is defined before. Applicants note that definiteness of claim language must be analyzed in light of the content of the particular application disclosure; the teachings of the prior art; and the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. MPEP § 2173.02. “[P]re-defined information,” as used in Applicants’ specification and the above rejected claims, is a well-known concept in the prior art. “[P]re-defined information” means information not directly created by an authentication process. As such, the scope of the claimed subject matter in the above claims can be determined by one having ordinary skill in the art. Applicants therefore request the

withdrawal of the rejections under 35 USC § 112, second paragraph, and the allowance of claims 1 and 7.

Claim 2

Claim 2 stands rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 6, paragraph 4, states that claim 2 is unclear, as it states that the first port and the second port are the same port, and it is unclear to the Examiner how two distinct ports could be one port. Claim 1 has been amended for clarification that the two ports of claim 1 are not necessarily distinct, that is, that the two ports of claim 1 may or may not be distinct. Claim 2 therefore adds the limitation that they are not distinct, *i.e.*, they are the same port. Claim 2 is not indefinite, as the claims are amended, and therefore should be allowed. Applicants therefore request the withdrawal of the rejection under 35 USC § 112, second paragraph, and the allowance of claim 2.

Claim 3

Claim 3 stands rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 6, paragraph 4, states that the term “nature” is indefinite. Claim 3 has been amended, as explained above, to make clear Applicants’ invention. Claim 3 is not indefinite as amended and therefore should be allowed. Applicants therefore request the withdrawal of the rejection under 35 USC § 112, second paragraph, and the allowance of claim 3.

Claims 5, 6, 18, 22, 31, 36, 44 and 46

Claims 5, 6, 18, 22, 31, 36, 44 and 46 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 6, paragraph 4, states that the term “associated” is indefinite. The above claims have been amended, as explained above, to make clear Applicants’ invention. The claims are not indefinite as amended and therefore should be allowed. Applicants therefore request the withdrawal of the rejections

under 35 USC § 112, second paragraph, and the allowance of claims 5, 6, 18, 22, 31, 36, 44 and 46.

#### Claim 50

Claim 50 stands rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 6, paragraph 4, states that the phrase “communication having a recognized purpose and an additional purpose” is indefinite, because every communication has a purpose. In the method of claim 50, however, a communication may have more than one purpose, and these purposes may be interpreted as a recognized purpose and an additional purpose, with the additional purpose being a request for authentication command. The scope of the claimed subject matter in the above claims can therefore be determined by one having ordinary skill in the art. Claim 50, therefore, is not indefinite and should be allowed. Applicants request the withdrawal of the rejection under 35 USC § 112, second paragraph, and the allowance of claim 3.

#### Claim 53

Claim 53 stands rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action on page 7, paragraph 4, states that the phrase “higher world wide name” is indefinite. Claim 53 has been amended, as explained above, to make clear Applicants’ invention. Claim 53 is not indefinite as amended and therefore should be allowed. Applicants therefore request the withdrawal of the rejections under 35 USC § 112, second paragraph, and the allowance of claim 53.

#### Rejections under 35 U.S.C. § 103

The Examiner has the burden to establish a prima facie case of obviousness. MPEP § 2142. To establish a prima facie case of obviousness under 35 U.S.C. § 103, three criteria must be met. *Id.* The first element of a prima facie case of obviousness under 35 U.S.C. § 103 is that there must be a suggestion or motivation to combine the references. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). The second element of a prima facie case of

obviousness under 35 U.S.C. § 103 is that there must be a reasonable expectation of success in the proposed combination of the references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097, 231 USPQ 375, 379 (Fed. Cir. 1986). The third element of a prima facie case of obviousness under 35 U.S.C. § 103 is that the proposed combination of the references must teach or suggest all of Applicants' claim limitations. *In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974).

#### Claims 1-19, 21-32, and 34-53

Claims 1-19, 21-32, and 34-53 stand rejected in the Office Action under § 103(a) as being unpatentable over U.S. Patent 5,473,599 to Li ("Li") in view of "Entity Authentication using Public Key Cryptography" by William Daley ("Daley"). Applicants respectfully traverse each rejection.

#### Claims 20 and 33

Claims 20 and 33 stand rejected in the Office Action under § 103(a) as being unpatentable over Li in view of Daley in view of JP02001148697A. Applicants respectfully traverse each rejection.

#### No Suggestion or Motivation to Combine

To establish a prima facie case of obviousness, there must be a suggestion or motivation to modify Li. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). The suggestion or motivation to modify Li must come from the teaching of the cited art itself or reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner must explicitly point to the teaching suggesting the proposed modification, and the Examiner must present a convincing line of reasoning supporting the rejection. *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985). Absent such a showing, the Examiner has impermissibly used "hindsight" occasioned by Applicants' own teaching to reject the claims. *In re Surko*, 11 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997); *In re Vaeck*, 947 F.2d 488m 20 USPQ2d 1438 (Fed. Cir. 1991); *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed.

Cir. 1991); *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990); *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1398 (Fed. Cir. 1989).

There is no suggestion or motivation to modify Li. Li discloses a system and protocol for routing data packets from a host on a LAN through a virtual address belonging to a group of routers. The present invention claims security enhancements for a networking environment. Li is a system for increasing reliability of LAN communications through a router by switching to a another working router if the primary router fails. The routers of Li periodically send "hello" messages to each other so that the operability of the router sending the messages will be known by the other routers. Li does not suggest or provide motivation for security, let alone the switch-level security of the present invention. Li, in fact, teaches away from security, as is reinforced by the disclosure in Li of sending hello messages to all routers using an IP multicast address and the use of the same weak authentication (password) for each router in the group. Furthermore, readers of skill in the art will recognize that the authentication disclosed in Li is for the purpose of preventing messages received from routers outside of the defined group from inadvertently being perceived as messages from routers within a defined group. Again, this authentication is for reliability purposes and not for security, as suggested by the weak authentication disclosed in Li. Thus, there is no suggestion or motivation to modify Li. The lack of a suggestion or motivation to modify Li is sufficient by itself to make the above claims allowable. As such, the rejection of claims 1-53 should be withdrawn and the claims should be allowed.

#### No Reasonable Expectation of Success

To establish a prima facie case of obviousness, there must be a reasonable expectation of success in the proposed modification of Li. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097, 231 USPQ 375, 379 (Fed. Cir. 1986). There can be no reasonable expectation of success in a proposed modification if the proposed modification changes the principle of operation of Li. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

There can be no reasonable expectation of success in a proposed combination of a system and process for routing data packets from a host on a LAN through a virtual address belonging to a group of routers of Li with the strong authentication protocols of Daley to produce enhancement in switch-level security in a network environment as claimed in the present



application. On the contrary, incorporating the 'strong authentication protocols' of Daley in the system and process for routing data packets from a host on a LAN through a virtual address belonging to a group of routers of Li would clearly change the principle of operation of Li—changing it from a system and method for increasing reliability through redundant routers to a system and method for increasing the security of the network through switch-level authentication. That is, the principle of operation of Li, using routers interchangeably to promote an uninterrupted flow of information, is changed completely, and in fact will not function at all, with the addition of a security protocol in which each communication received by a switch is authenticated according to an entity-specific protocol. The proposed modification of Li by Daley therefore cannot possibly support a prima facie case of obviousness. As such, the rejection of claims 1-53 should be withdrawn and the claims should be allowed.

Does Not Teach or Suggest All of Applicants' Claim Limitations

To establish a prima facie case of obviousness under 35 U.S.C. § 103, the proposed combination of the cited references must teach or suggest all of Applicants' claim limitations. Independent claim 1 of the present invention claims, among other elements:

a processor for (i) causing a comparison between said first secret fact and said second-type derivative of said first secret fact, and (ii) causing a comparison between said pre-defined information about said second switch and said third-type derivative of said pre-defined information about said second switch

Independent claim 10 of the present invention claims, among other elements, "sending a third-type derivative of said defined information concerning said first switch from said first port to said second port." Independent claims 23, 37, and 50 contain similar elements. Independent claim 51 of the present invention claims, among other elements, "at said second switch, attempting to verify said first switches signature using said PKI public key uniquely associated with said second switch."

In regard to claim 1, the Office Action, on page 7, paragraph 5, states that "Li teaches a system of routers that communicate through hello messages and include authentication messages (Col 3 lines 1-4, Col 10 line 65-Col 11 line 16)." The "system of routers that communicate

through hello messages and include authentication messages” of Li does not disclose the

processor for (i) causing a comparison between said first secret fact and said second-type derivative of said first secret fact, and (ii) causing a comparison between said pre-defined information about said second switch and said third-type derivative of said pre-defined information about said second switch

of claim 1 in the present application. The related method of Li does not disclose “sending a third-type derivative of said defined information concerning said first switch from said first port to said second port” as claimed in claim 10 of the present application or similarly claimed in claims 23, 37, and 50. Nor does the related method of Li disclose “at said second switch, attempting to verify said first switches signature using said PKI public key uniquely associated with said second switch” as claimed in claim 51 of the present application.

In regard to claim 1, the Office Action, on page 8, paragraph 5, states that “Daley teaches a strong authentication protocol . . . .” The “strong authentication protocol” of Daley does not disclose the

processor for (i) causing a comparison between said first secret fact and said second-type derivative of said first secret fact, and (ii) causing a comparison between said pre-defined information about said second switch and said third-type derivative of said pre-defined information about said second switch

of claim 1 in the present application. The related method of Daley does not disclose “sending a third-type derivative of said defined information concerning said first switch from said first port to said second port” as claimed in claim 10 of the present application or similarly claimed in claims 23, 37, and 50. Nor does the related method of Daley disclose “at said second switch, attempting to verify said first switches signature using said PKI public key uniquely associated with said second switch” as claimed in claim 51 of the present application.

Applicants respectfully submit that the Office Action cites references for elements which those references do not teach. Neither Li, nor Daley, nor any other reference cited in the Office Action has been shown by the Examiner to teach any of the claimed elements above. The combination of these references, therefore, cannot teach any of these claimed elements. Each dependent claim of the invention, depending directly or indirectly from one of the above independent claims, necessarily includes the limitations of the above claims. Thus, the Office

Action has failed to establish a prima facie case of obviousness in any of claims 1-53. For this reason alone, the rejections under 35 USC 103(a) should be withdrawn, and the claims should be allowed.

No Prima Facie Case of Obviousness

As shown above, there is no suggestion or motivation to combine the references proposed in the Office Action, there is no reasonable expectation of success in the proposed combination of these references, and the proposed combination of the references does not teach or suggest all of Applicants' claim limitations. As none of the three criteria for establishing a prima facie case of obviousness have been met, the Examiner has failed to meet his burden to establish a prima facie case of obviousness. MPEP § 2142. Applicants respectfully traverse each rejection, and request the withdrawal of the rejections and the allowance of claims 1-53.

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**CONCLUSION**

Reconsideration of the pending claims in light of the above remarks and allowance of all pending claims are respectfully requested. If, after considering this reply, the Examiner believes that a telephone conference would be beneficial towards advancing this case to allowance, the Examiner is invited to contact the undersigned attorney at the number listed.

3-22-06

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